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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,992	11/19/2003	Mark Wesselmann	AMSI-P001	7582
32986	7590	09/29/2005	EXAMINER	
IPSG, P.C. P.O. BOX 700640 SAN JOSE, CA 95170-0640			GHYKA, ALEXANDER G	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,992

Applicant(s)

WESSELMANN ET AL.

Examiner

Alexander G. Ghyska

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 21-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

AO 2812
Alex Ghyska

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Applicant's election of categories (A)(1), (B)(3) and (C)(2) in the reply filed on July 18, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 21-35 are withdrawn from consideration. Claims 1-20 are now under consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 7-9, 12 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Wood et al (US 2005/0064681).

The present Claims generally require a protective disk for protecting a semiconductor wafer during processing comprising an adhesive layer configured to adhere to the semiconductive wafer; and a support layer layer coupled to the adhesive layer configured to support the semiconductor layer during processing.

Wood et al disclose a support structure for thinning semiconductive substrates and an adhesive layer as required by Claim 1. See Figures 1-6 and 13A, and page 7,

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paragraphs 94-95. Wood et al also disclose high molecular polymers such as thermosetting polymers and photoresist, and also the use of fillers such as ceramic materials, as required by Claims 2, 4 and 7. See page 3, paragraph 47. With respect to Claim 9, the protective disk is substantially the same diameter as the wafer. See Figures 2-4. Moreover, Wood et al further disclose the protective disk provides support to edge bevel of the semiconductor wafer as required by present Claim 12. See Figures 4A-4C. With respect to Claims 16 and 18, Wood et al disclose a backgrinding process and correlating the coefficient of thermal expansion (CET) between the support and the semiconductor material. Therefore, the afore mentioned Claims are anticipated by the Wood et al reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10-11 and 13-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 2005/0064681).

Claims 10-11 and 13-14 further specify a thickness of 600 microns and the use of an intermediate layer.

Wood et al is relied upon as discussed above.

However, Wood et al do not disclose the thickness of the protective disk or the use of an intermediate layer.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to optimize the thickness of the support structure and arrive at the presently claimed limitations. This accords with the rule that discovery of an optimum value of a result effective variable is ordinarily within the skill in the art. *In re Aller*, 42 CCPA 824, 105 USPQ 233 (1951). With respect to the use of an intermediate layer, it would have been obvious for one of ordinary skill in the art to use an intermediate layer, as this is merely a duplication of parts (layers), which has been held to be within the level of skill of one of ordinary skill in the art. See *In re Harza*, 124 USPQ 378 (CCPA 1960). Therefore, a *prima facie* case of obviousness is established.

Claims 3, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 2005/0064681) in view of Rottstegge (US 6,946,236).

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Claims 3, 19 and 20 further require that the polymer is soluble in a mildly alkaline solution such as ammonium hydroxide.

Wood et al is relied upon as discussed above. Woods disclose the use of photoresist. See page 3, paragraph 47.

However, Wood et al do not disclose that the photoresist polymer is soluble in a mildly alkaline solution, such as ammonium hydroxide.

Rottstege et al is merely relied upon to disclose that photoresist compositions are known to be soluble in alkaline solutions such as ammonium hydroxide. See column 2, lines 5-15.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, that the photoresist disclosed by Wood et al, is soluble in alkaline solutions such as ammonium hydroxide in view of the disclosure of Rottstege et al. As Wood et al broadly call for photoresist polymers, and as Rottstege et al disclose their solubility, a *prima facie* case of obviousness is established.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US 2005/0064681) in view of Azami et al (US 6911358).

Claims 5 and 6 further require the presence of alkaline earth oxides or salts in the disk.

Wood et al is relied upon as discussed above. Woods disclose the use of glass. See page 3, paragraph 47.

However, Wood et al do not disclose alkaline earth oxides or salts .

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Azami et al is merely relied upon to disclose the use of barium borosilicate glass as a substrate for silicon wafers. See column 4, lines 10-15.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to use the barium borosilicate glass of Azami et al as the glass called for by Wood et al, for its known benefit in the art to support silicon substrates. Therefore, a *prima facie* case of obviousness is established.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG

September 27, 2005

ALEXANDER GHYKA
PRIMARY EXAMINER

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Alex Ghysa